CHAPTER 13

REPAIRING WEBBING

13-1. TYPES OF WEBBING

Webbing is a strong band woven from nylon or cotton. It is used to construct the chapes, loops, billets, straps, and handles which are sewn to canvas items. Nylon webbing is waterproof and mildew-resistant. It also resists fraying and breaking. Repairs to nylon webbing usually involve restitching the webbing which has been pulled loose from the supporting canvas. Cotton webbing is treated to make it subject to wear because it is made of a natural fiber. Repairs to cotton webbing often involve replacing the entire webbing.

13-2. CHAPES

Chapes (Figure 13-1) are folded and overlapped strips of canvas or webbing. They are used to attach hardware, such as buckles and rings, to tents and canvas items. Chapes are called D-ring chapes, buckle-chapes, and other similar names, according to the hardware they carry. Damaged chapes are replaced with new chapes which are fitted and sewn in place using folds and seams identical to those used in the original construction of the item. Directions for fitting, sewing, and reinforcing chapes are given below.

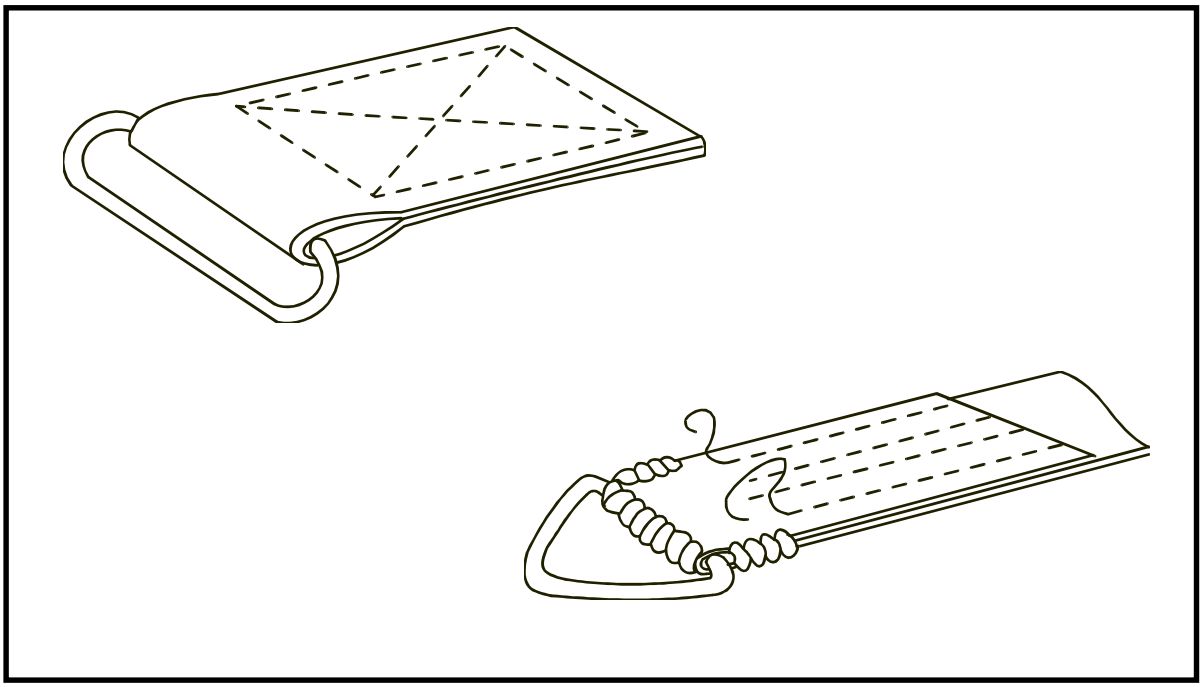

Figure 13-1. Chapes

a. Fitting. Webbing for chapes is folded and overlapped to fit a certain use or piece of hardware. Four types of folds are used to fit chapes.

(1) Type 1 Fold. Type 1 fold (Figure 13-2) is made with a piece of webbing that is twice as long as the planned chape. To make a type 1 webbing fold--

(a) Fold the webbing in half, and crease the fold flat.

(b) Insert one half of the webbing through the hardware.

(2) Type 2 Fold. For type 2 fold (Figure 13-3), the webbing is cut so that it is twice as long as the planned chape. To make a type 2 webbing fold, insert one end of the webbing through the hardware, and then--

(a) Fold one end of the webbing under until it is 1 to 2 inches from the other end.

(b) Move the hardware until it lies in the fold.

(c) Fold under the other end of the webbing so that the two ends butt against one another.

(3)..Type 3 Fold. Type 3 fold (Figure 13-4) is made with webbing 1 to 2 inches longer than twice the length of the planned chape. To make a type 3 webbing fold, place the hardware on the webbing, and then--

(a) Fold one end under until it is 1 to 2 inches from the other end. Slide the hardware on the webbing until it lies in the fold.

(b) Fold the other end of the webbing under so that the two ends overlap.

(4)..Type 4 Fold. Type 4 fold (Figure 13-5) is made by folding a piece of webbing that is four times as long as the planned chape. To make a type 4 webbing fold--

(a) Fold the webbing in half.

(b) Stick the folded end through the hardware.

(c) Fold the webbing in half again so that the first fold is on top and even with the two cut ends. Move the hardware so that it lies in the second fold.

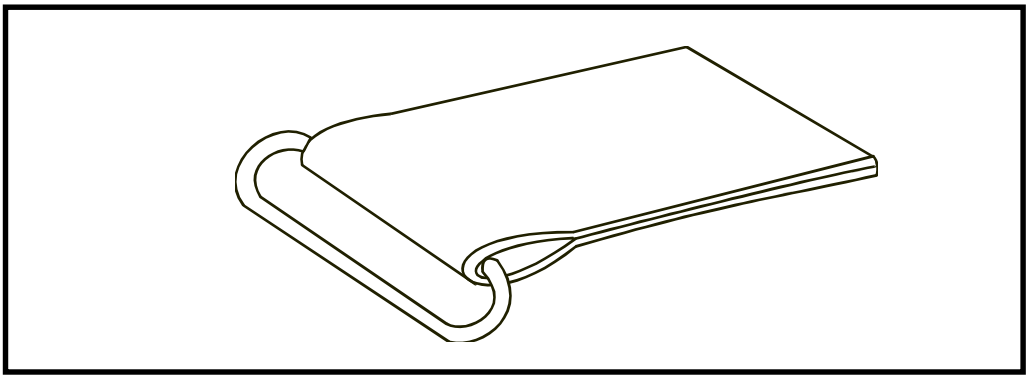

Figure 13-2. Type 1 fold

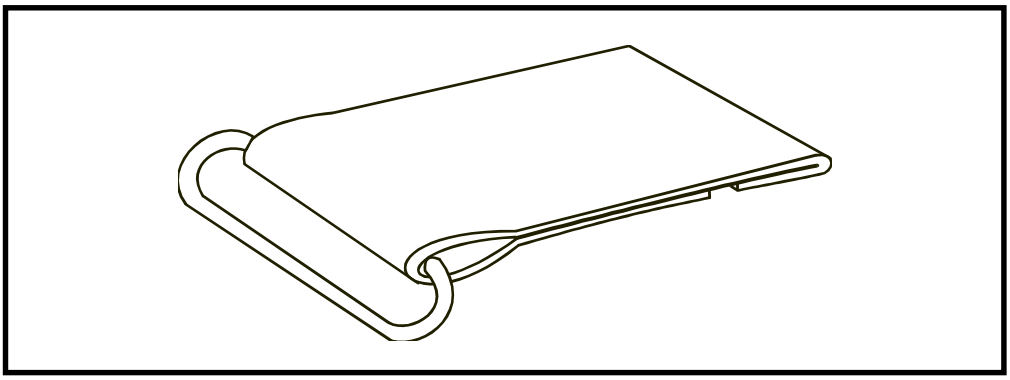

Figure 13-3. Type 2 fold

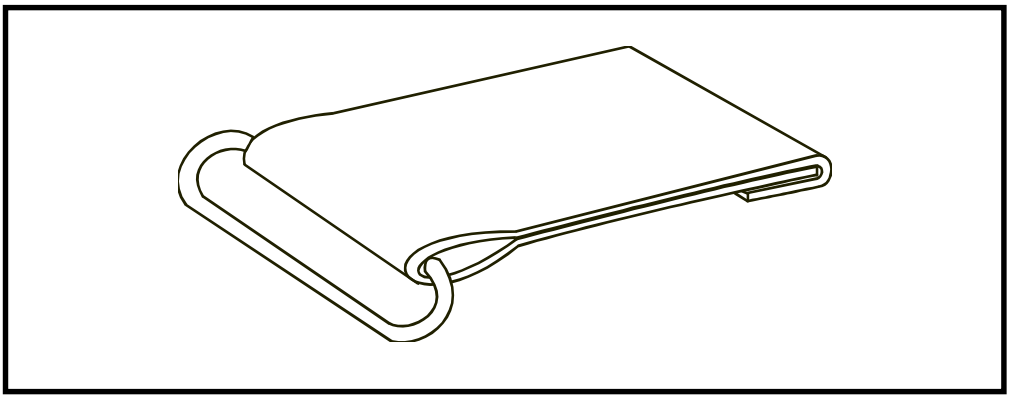

Figure 13-4. Type 3 fold

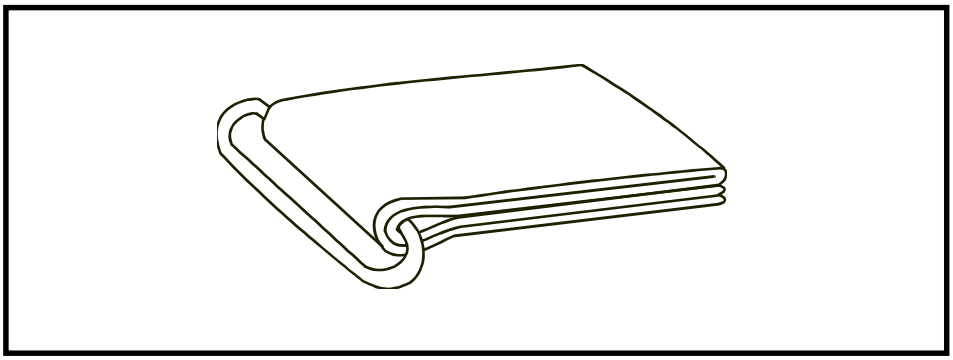

Figure 13-5. Type 4 fold

b. Sewing. Chapes are topstitched in place with an X-shaped seam (Figure 13-6). Webbing sewn in place with this type of stitching is less likely to pull loose. To sew a chape in place--

(1) Position the chape on top of the canvas item.

(2) Insert the chape and canvas under the presser foot of a heavy-duty sewing machine so that the hardware is to the left.

(3) Start stitching a seam in the upper right-hand corner 1/4 inch from the edge. Tack the seam at the beginning.

(4) Stitch around the four sides of the chape in a clockwise direction. Pivot the chape and canvas on the needle at each corner.

(5) Pivot the chape and canvas on the needle, and stitch diagonally across the chape from the upper right-hand corner to the lower left-hand corner.

(6) Pivot the chape and canvas on the needle. Stitch over the side seam to the upper left-hand corner.

(7) Pivot the chape and canvas on the needle. Stitch across the chape diagonally from the upper left-hand corner to the lower right-hand corner.

(8) Pivot the chape and canvas on the needle. Stitch over the side seam to the upper right-hand corner. Tack the seam at the end.

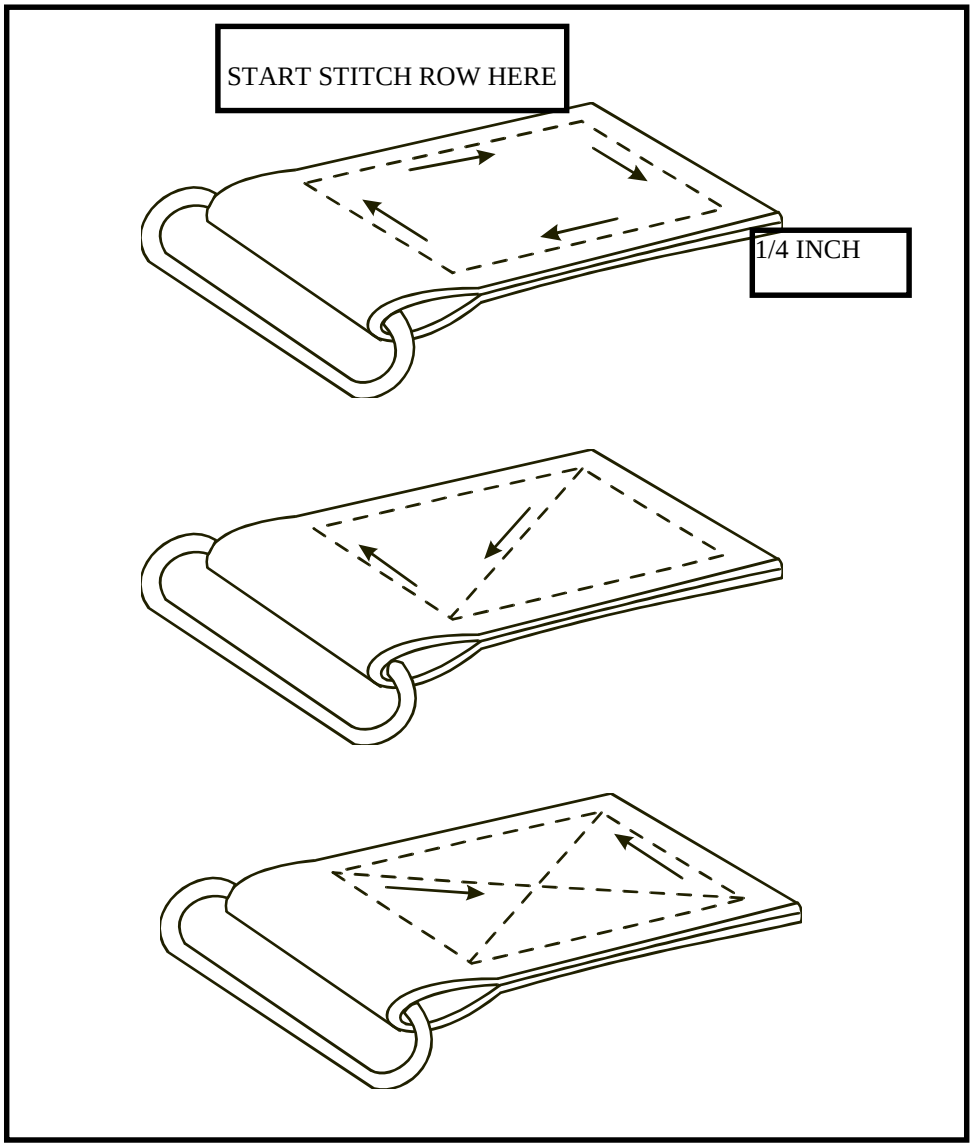

Figure 13-6. X-shaped chape seam

c. Reinforcing. Some chapes are subject to a lot of pulling and tugging. These chapes should be reinforced to prevent the underlying canvas from tearing. Use one of the following methods to reinforce chapes:

(1) Webbing. Sew another piece of webbing across the chape as reinforcement (Figure 13-7). Sew the reinforcement in place the same way the chape was sewn in place.

(2) Stitching. Sew four parallel rows of machine stitching the length of the chape (Figure 13-8). Hand sew four round stitches on both sides of the looped end of the chape. Sew five round stitches on the end looped through the hardware.

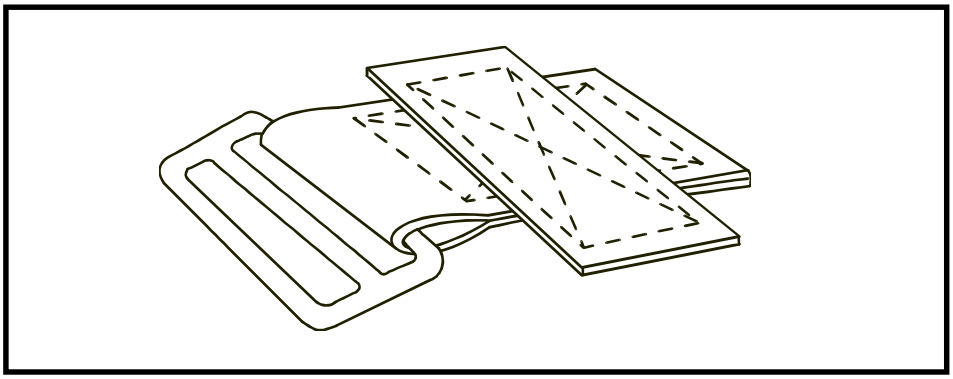

Figure 13-7. Reinforcement webbing

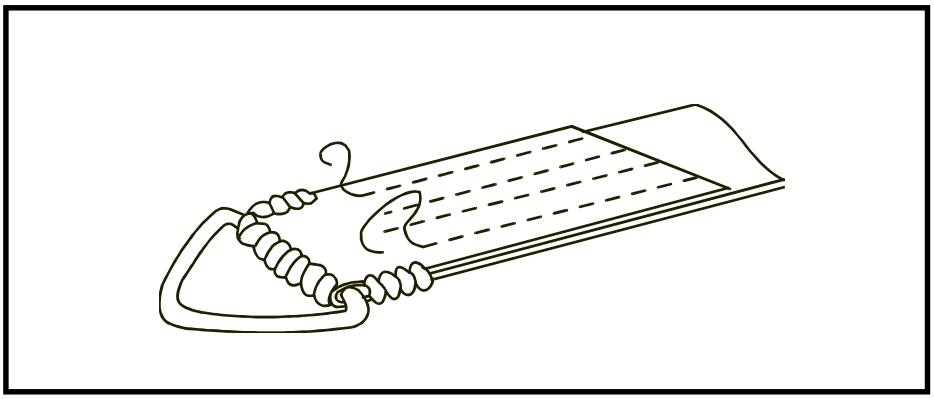

Figure 13-8. Reinforcement stitching

13-3. LOOPS

Loops are pieces of webbing which form openings when they are sewn to canvas items. They are used to hold and fasten lines and straps in place. Four kinds of loops can be made with webbing.

a. Flat Loop. The flat loop (Figure 13-9) lies entirely against the canvas item. To make a flat loop-

(1) Cut a piece of webbing the length of the planned loop plus enough to form a turnunder at each end.

(2) Turn under the ends.

(3) Sew the webbing to the canvas item with X-shaped seams.

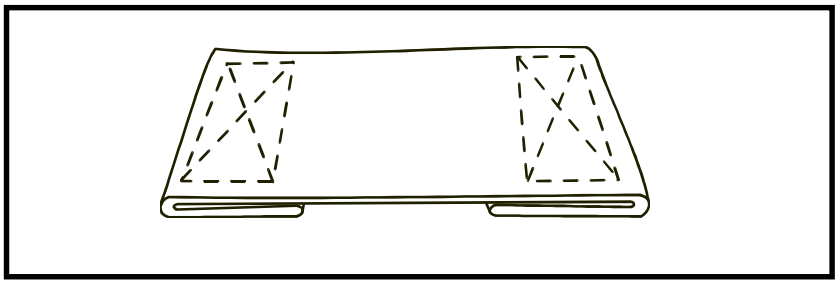

Figure 13-9. Flat loop

b. Short Loop. The short loop (Figure 13-10) sticks out a short distance from the canvas item. To make a short loop--

(1) Cut a piece of webbing. Allow for a short loop and the turnunder at each end.

(2) Fold the webbing in half to form a little loop.

(3) Sew a seam across the webbing at the base of the loop.

(4) Turn under the ends.

(5) Sew the webbing to the canvas item with X-shaped seams.

c. Two-Ply Long Loop. The two-ply long loop (Figure 13-11) is used where a strong, lengthy loop is needed. To make this loop--

(1) Cut two pieces of webbing. Allow for a long loop and the turnunder at each end.

(2) Sew the two pieces of webbing together with a row of stitches along each edge.

(3) Fold the webbing to form a long loop.

(4) Sew a seam across the webbing at the base of the loop.

(5) Turn under the ends.

(6) Sew the webbing to the canvas item with X-shaped seams.

d. Edge-Type Loop. The edge-type loop (Figure 13-12) is used on tarpaulins for tie-line fastenings. It is also used as the female half of a toggle fastener. To make this loop--

(1) Cut a piece of webbing twice the length of the planned loop plus enough to form a turnunder at each end.

(2) Turn under the ends.

(3) Place the webbing on the canvas item so that the ends of the webbing are even and the inside edges touch.

(4) Sew the webbing to the canvas item with one X-shaped seam.

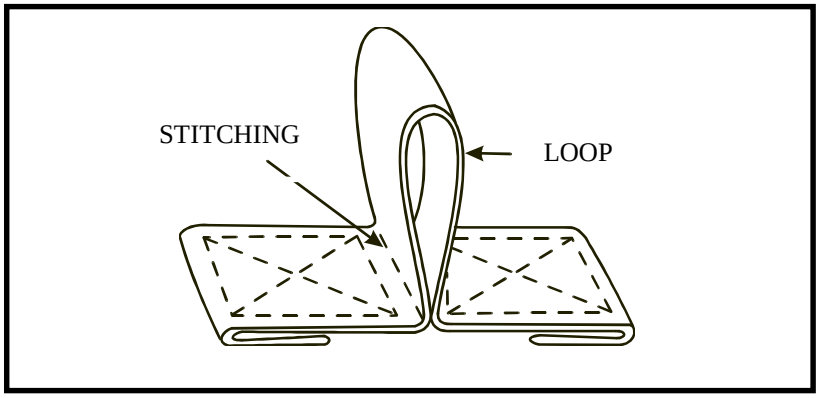

Figure 13-10. Short loop

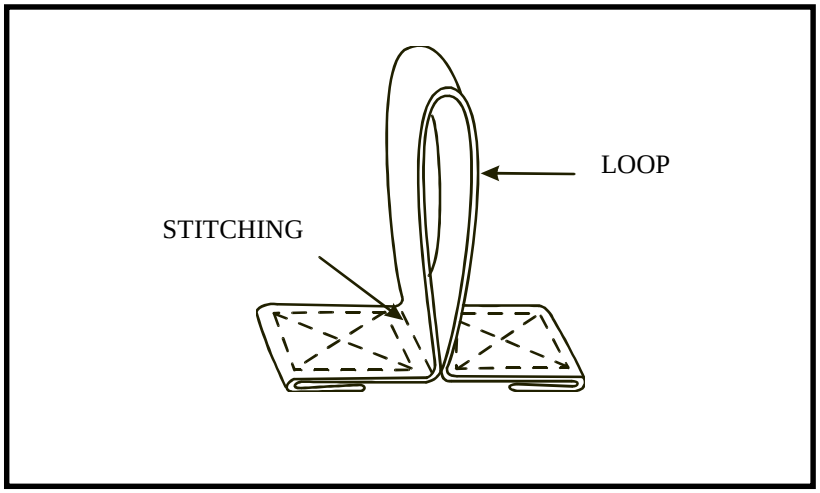

Figure 13-11. Two-ply long loop

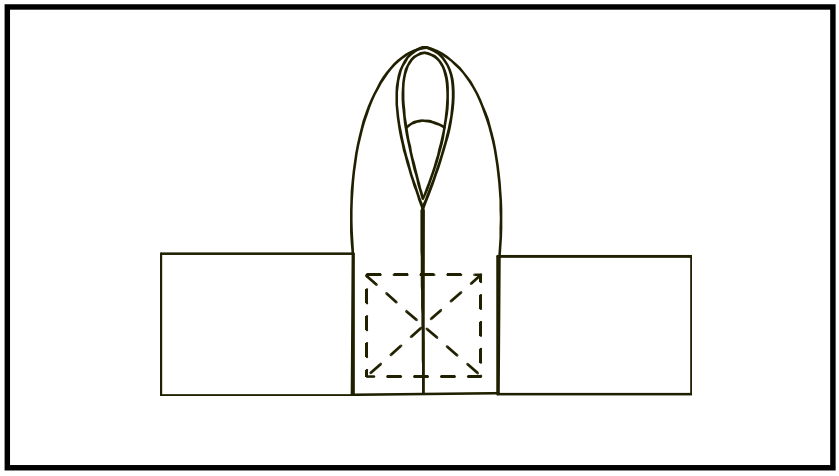

Figure 13-12. Edge-type loop

13-4. STRAPS

Straps are bands of webbing by which canvas items are held, fastened, pulled, or lifted. The ends of straps are left plain or rolled, angled, or shaped to take hardware, billets, and chapes.

a. Plain End Strap. A strap with a plain end (Figure 13-13) is a piece of webbing cut to size. The end is finished by attaching an end clip or by looping it through a piece of hardware, turning under the raw edge, and sewing it in place to the strap. A plain strap that has a buckle on one end and an end clip on the other is a billet (Figure 13-14).

b. Rolled-End Strap. A strap with a rolled end (Figure 13-15) is tapered by rolling and folding the edges to the center of the webbing. Both the inner and outer edges are sewn in place. The end of the strap is finished by attaching an end clip, or by looping it through a piece of hardware, turning under the raw edge, and sewing it in place to the strap. If a 2-inch-wide strap is tapered to a 1-inch end, the taper should be about 2 1/2 inches long.

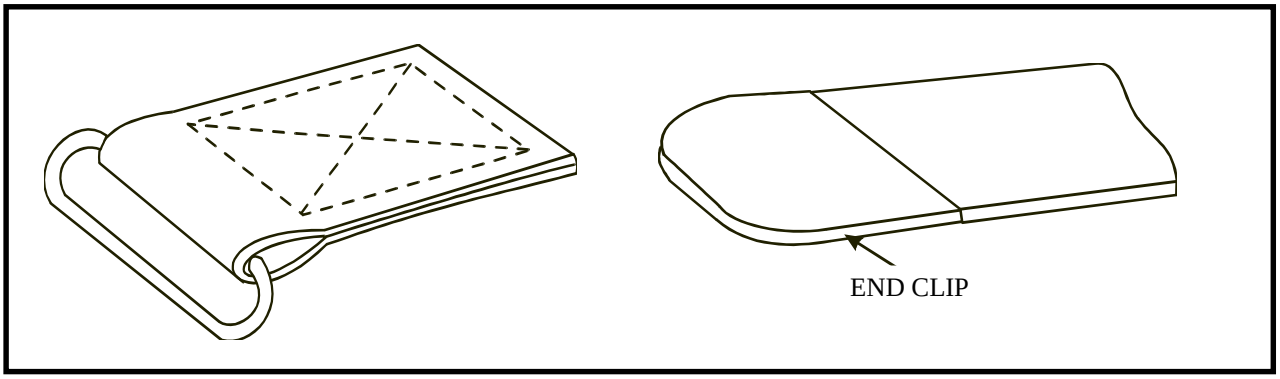

Figure 13-13. Plain-end strap

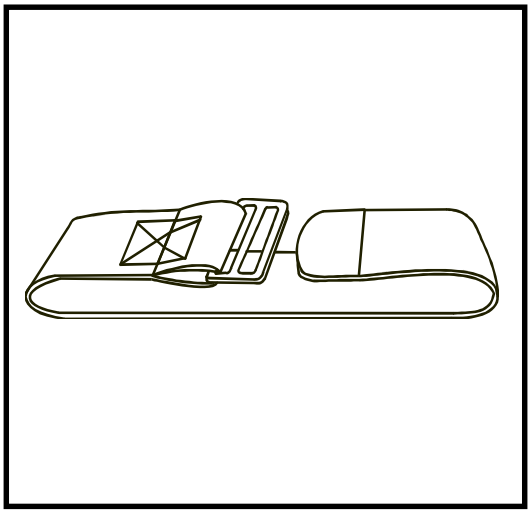

Figure 13-14. Billet

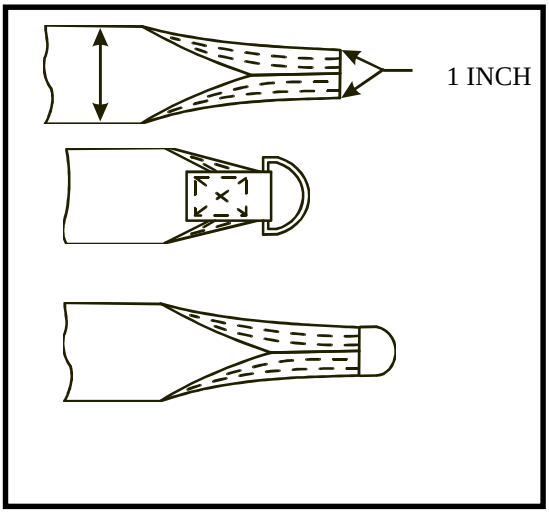

Figure 13-15. Rolled-end strap

c. Angled-End Strap. A strap with an angled end (Figure 13-16) has corners which have been folded to meet at the center of the strap. The strap is finished by sewing a billet on top of the angled end or by sandwiching the angled end between the two layers of a chape and sewing the chape in place.

d. Shaped-End Strap. A strap with a shaped end (Figure 13-17) is notched, the edges are brought together, and a billet or chape is sewn in place. A piece of reinforcement webbing is usually placed under the shaped end and sewn in place when a billet is attached.

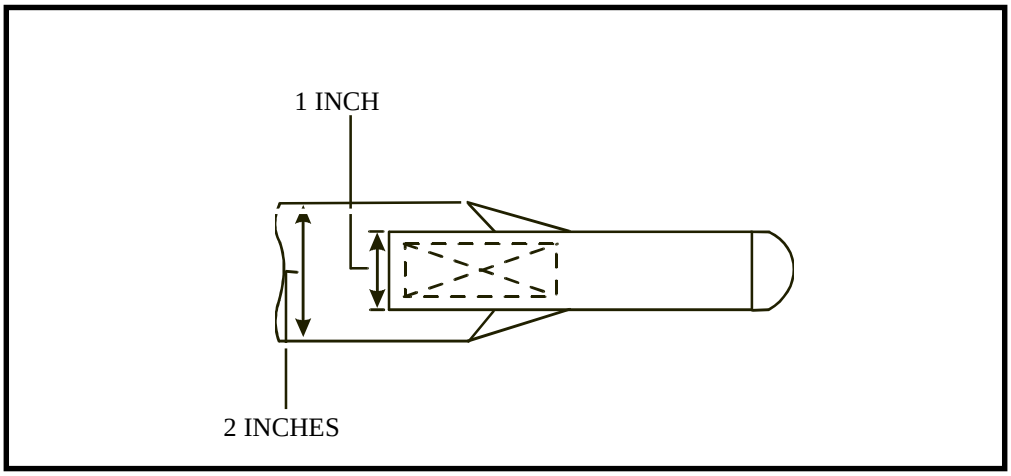

Figure 13-16. Angled-end strap

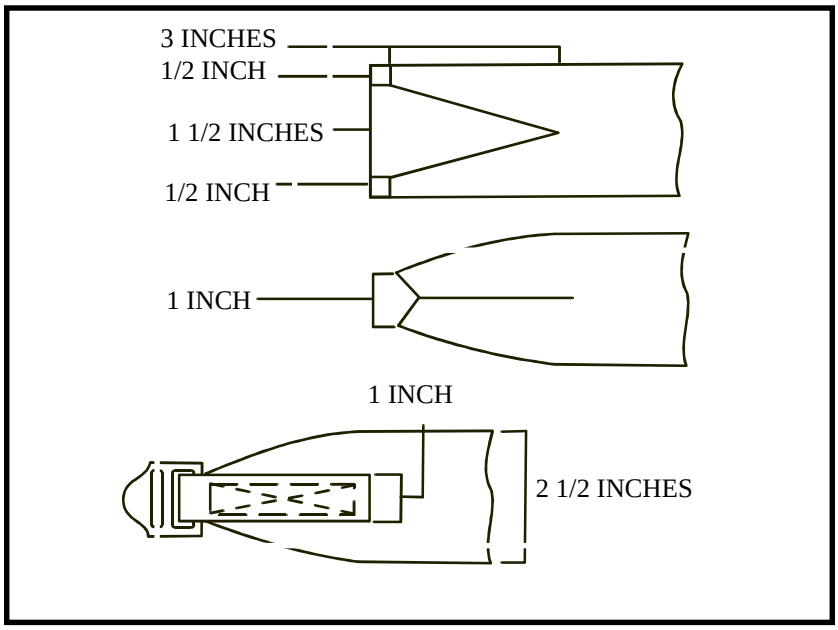

Figure 13-17. Shaped-end strap

13-5. HANDLES

Handles are pieces of webbing by which canvas items are grasped and carried. The two kinds of handles used in the repair of canvas items are plain and stitched-grip.

a. Plain Webbing Handle. A plain webbing handle (Figure 13-18) is used when the strain is carried along the vertical plane of the item. To make this handle--

(1) Cut a piece of webbing 12 inches long.

(2) Position the webbing on the canvas item so that it forms and upside-down U. The outside edges should be 5 1/2 inches apart.

(3) Turn under each end 1/2 inch.

(4) Stitch each end of the handle in place by sewing an X-shaped seam that is about 2 inches long.

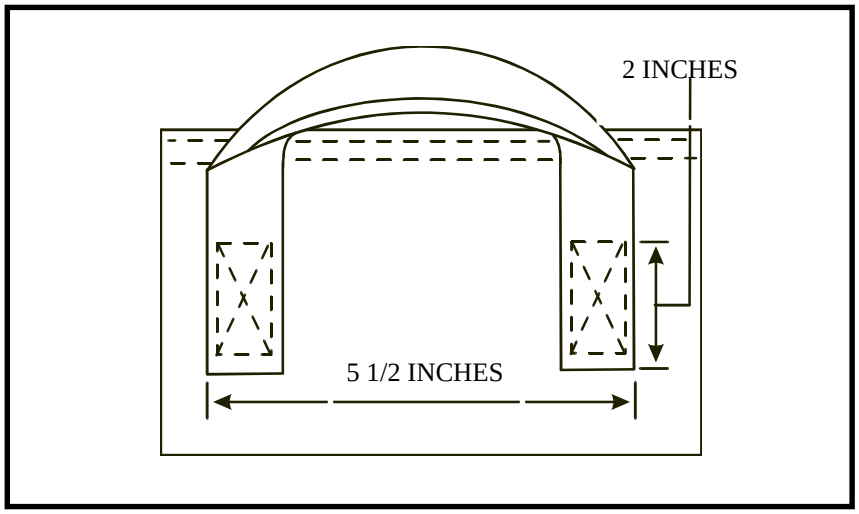

Figure 13-18. Plain webbing handl

b. Stitched-Grip Webbing Handle. A stitched-grip webbing handle (Figure 13-19) is used when the strain is on the horizontal plane of the item. To make this handle--

(1) Cut a piece of 2-inch-wide heavy cotton webbing 15 1/4 inches long.

(2) Fold the webbing in half, and mark the center.

(3) Draw straight chalk lines across the webbing 2 7/8 inches to the left and right sides of the center.

(4) Fold the edges of the webbing to the center between the lines. Taper the webbing beyond the lines.

(5) Stitch along the edges of the webbing between the lines. Stitch on top of each chalk line twice.

(6) Cut a piece of duck 5 1/2 inches wide and 40 inches long to use as reinforcement backing. Turn under the raw edges 1/2 inch, and crease the folded edges in place.

(7) Center the backing under the area on the canvas item where the handle will be attached.

(8) Stitch the backing in place.

(9) Turn under each end of the handle 5/8 inch.

(10) Center the handle on the canvas item and backing so that the ends are 12 inches apart. Leave some slack.

(11) Stitch the handle in place by sewing a square-shaped seam at each end.

(12) Cut two reinforcement pieces 4 1/2 inches long from 2-inch-wide webbing.

(13) Center the reinforcements across the ends of the handle. Turn under the ends 1/2 inch, and stitch them in place with X-shaped seams.

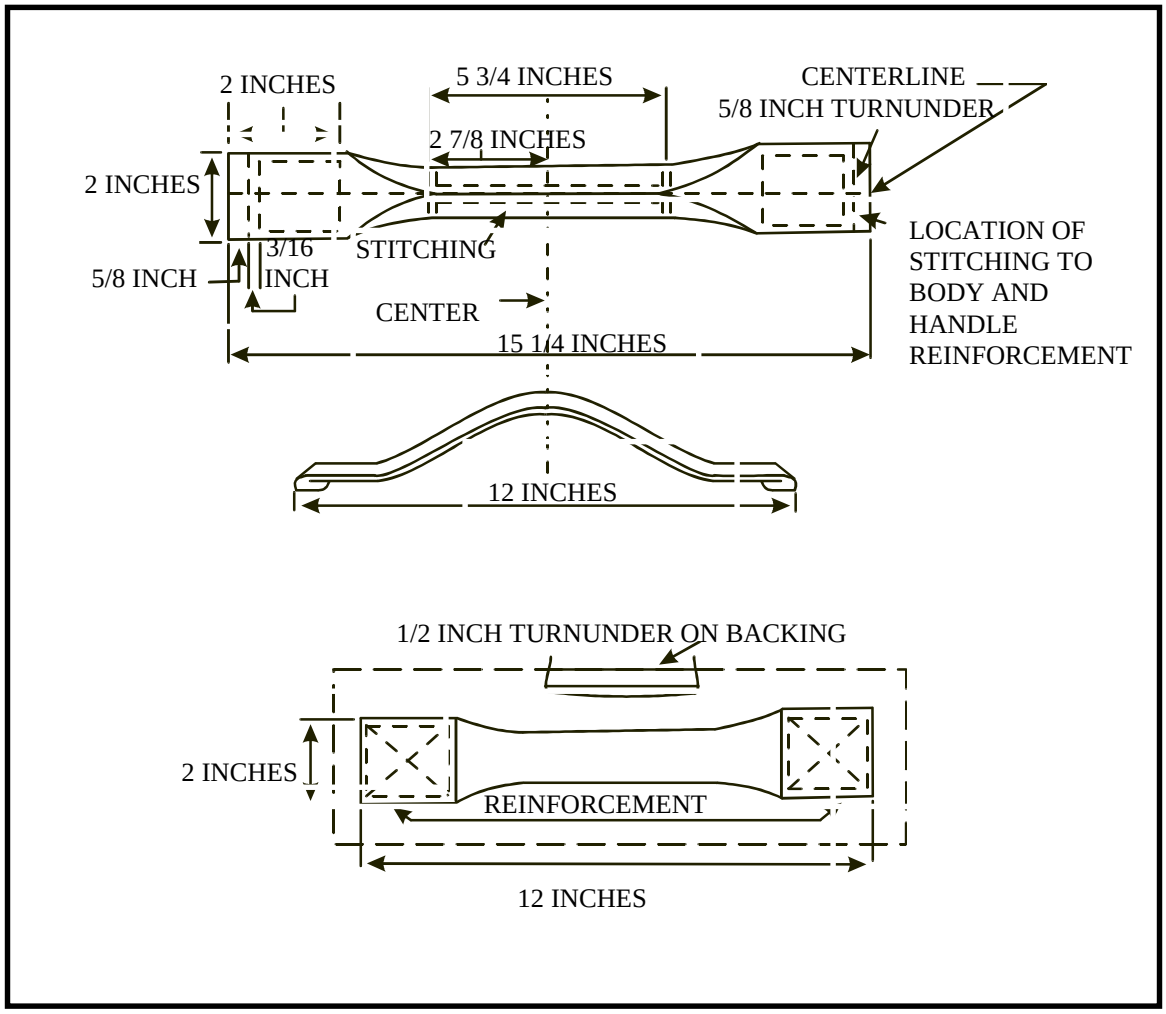

Figure 13-19. Stitched-grip webbing handle